

SHESTAKOV, V.A., kand.tekhn.nauk; SNEGOV, A.I., gornyy inzh.;
BONDAREV, K.D., gornyy inzh.; ALIYEV, A.A., gornyy inzh.;
AGZAMOV, K.Sh., gornyy inzh.; ABRAMOV, N.P.

Using deep boreholes for breaking ore in the Sumsar Mine.
Gor. zhur. no.12:8-10 D '62. (MIRA 15:11)

1. Institut gornogo dela i metallurgii AN Kirgizskoy
SSR (for Shestakov, Snegov, Bondarev, Aliyev, Agzamov).
2. Sumsarskiy rudnik (for Abramov).
(Sumsar region--Boring--Labor productivity)
(Blasting)

MUKHIN, Mikhail Yegorovich; SHESTAKOV, Viktor Aleksandrovich.
YALIMOV, Nariman Galimovich; MOSKETS, V.N., ed.

[Underground mining systems in Kirghizia] Sistemy pod-
zemnoi razrabotki na rudnikakh Kirgizii. Frunze, Izd-
vo "Ilim," 1965. 105 p. (MIRA 18:6)

MUKHIN, M.Ye., otv. red.; SHESTAKOV, V.A., red.; YALYMOV, N.G.,
red.; KUCHKIN, V.A., red.

[Improving systems of ore mining in unstable rock] So-
vershenstvovanie sistem razrabotki rudnykh mestorozhde-
nii v neustoichivyykh porodakh. Frunze, "Ilim," 1965.
180 p. (MIRA 18:11)

1. Akademiya nauk Kirgizskoy SSR, Frunze. Institut fiziki
i mekhaniki gornyykh porod.

L 2535-66 EWT(m)/EWA(d)/ENP(t)/ENP(z)/ENP(b) JD
ACCESSION NR: AP5021359

UR/0120/65/000/004/0182/0187
621.318.3:621.384.634

50

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B.14

AUTHOR: Akhmanov, V. V.; Barkov, L. M.; Nikol'skiy, B. A.; Sokolov, B. V.;
Khakimov, S. Kh.; Shestakov, V. D.; Bobovikov, R. S.; Dobretsov, Yu. P.;
Zamolodchikov, B. I.

TITLE: An arrangement for producing pulsed magnetic fields of strengths up to 150 kilogauss

SOURCE: Pribery i tekhnika eksperimenta, no. 4, 1965, 182-187

TOPIC TAGS: pulsed magnetic field, thyatron, synchrocyclotron

ABSTRACT: The units of an apparatus for producing a pulsed magnetic field of 146 kilogauss in a space of about 600 cm³ are described. Pulsed magnets of beryllium bronze are powered by a capacitor bank of 0.1 farad capacitance. The capacitors are charged through limit resistances to 2 kv from a thyatron rectifier, and a I-100/5 ignitron is used as the switching element. Synchronization and control for operation with a synchrocyclotron are obtained by a special circuit. This arrangement for obtaining the pulsed field operates reliably. In the tests two separate magnets were used, each producing a field of 146 kilogauss. The use of the I-100/5

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ACCESSION NR: AP5021359

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ignitron when proper heating and cooling were maintained prior to switching in the field secured operation without breakdown for 20—40 hr at a switching rate of 10/min. The joint operation of the pulsed magnet with the synchrocyclotron required some rearrangement of the control system to guarantee that no particle was emitted without accompaniment of a pulsed magnetic field. "The authors express their thanks to V. I. Danilov, T. N. Tomilina, and I. B. Yanchevich for carrying on the work. The authors are grateful to I. I. Gurevich and V. P. Dzhelepov for their constant interest and help in the work. The authors express their thanks to V. I. Smirnov, F. Ye. Gugin, I. P. Lavrushkin, Yu. V. Maksimov, A. V. Shestov, V. I. Ivanov, I. M. Markachev, A. F. Burtsev, B. V. Degtyarev, N. P. Chistyakov, and M. T. Berezov for their aid in maintaining and operating the equipment." Orig. art. has: 11 figures and 1 table. [04]

ASSOCIATION: Institut atomnoy energii GKAE, Moscow (Institute of Atomic Energy GKAE);
IYaf'OIYaf'; NII EFA; MIFI

SUBMITTED: 17Jun64

ENCL: 00

SUB CODE: EAMP

OTHER: 003

ATD PRESS: 4110

NO REF SOV: 001

Lehr
Card 2/2

I 8202-66 JXT(C2)

ACC NR: AT5022299

SOURCE CODE: UR/3136/64/000/620/0001/0011

AUTHOR: Gurevich, I. I.; Makar'ina, L. A.; Nikol'skiy, B. A.; Sokolov, B. V.;
Surkova, L. V.; Khakimov, S. Kh.; Shestakov, V. D.; Dobretsov, Yu. P.; Akhmanov, V. V.

ORG: [Gurevich, Makar'ina, Nikol'skiy, Sokolov, Surkova, Khakimov, Shestakov] IAE;
[Dobretsov] MIFI; [Akhmanov] LYAP OIYaI

TITLE: Asymmetry of the angular distribution of electrons in the decay $\pi^+ \rightarrow \mu^+ + e^+$
in a magnetic field of 140,000 gauss

SOURCE: Moscow. Institut atomnoy energii. Doklady, IAE-620, 1964. Asimmetriya uglo-
vogo raspredeleniya elektronov pi plus \rightarrow mu plus \rightarrow e plus raspada v magnitnom pole
napryazhenost'yu 140 000 gauss, 1-11

TOPIC TAGS: mu meson, pi meson, positron, bubble chamber, radioactive decay

ABSTRACT: The universal V-A coupling theory applied to the determination of the an-
gular distribution of electrons in the reaction $\pi^+ \rightarrow \mu^+ + e^+$ is given by

$$\frac{dN}{d\theta} \sim 1 - \alpha \cos \theta$$

in terms of the parameter α . In order to obtain a value of α which depends on the
polarization state of the meson, an experiment was performed showing the effect coun-
tering the depolarization of the dense medium through which the meson is moving.

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ACC NR: AT5022299

Critical magnetic fields needed to oppose the depolarizing effect, which in turn allows more accurate determination of the parameter a , were found. Only 8800 gauss were required in the hydrogen bubble chamber to counter the effect of hydrogen depolarization. However, the scatter in the value is quite large. The photographic emulsion yielded much smaller scatter but required an application of a very large magnetic field of 140,000 gauss. The value of a found in the experiment is 0.325 (as compared to the theoretical value of 0.333). This value was obtained by analyzing over 66,000 events. A brief discussion is given of the effect of the magnetic field on the motion of the electron. It is shown that the electron direction must be measured with respect to the magnetic field direction after setting certain constraints on the selection of the angular range. Orig. art. has: 3 figures, 1 table, 5 formulas.

SUB CODE: 18/

SUBM DATE: 00/

ORIG REF: 005/ OTH REF: 007

nw
Card 2/2

L 15166-66 EWT(d)/EWP(1) IJP(c) BB/GG

ACC NR: AP5027014

SOURCE CODE: UR/0120/65/000/005/0094/0096

AUTHOR: Gol'bek, G. R.; Shestakov, V. D.ORG: Institute of Atomic Energy, GKAE (Institut atomnoy energii GKAE)TITLE: Transistorized reversible decimal pulse counter 16C, 44

SOURCE: Pribery i tekhnika eksperimenta, no. 5, 1965, 94-96

TOPIC TAGS: pulse counter, transistorized pulse counter

ABSTRACT: A reversible decimal pulse counter is described which is intended for computers and in which the sequential connections between its triggers are permanent. The decimal count is materialized by a transistor switch which applies the ninth arriving pulse to the second and third triggers. An experimental model built with P16 transistors and D1 diodes exhibited a stable operation with forward and reverse directions with (a) a supply voltage of 3-15 v, (b) a repetition rate from single pulses to 120 kc, (c) an input-pulse amplitude of 50-100% supply voltage. The resolving time of the counter is 7×10^{-6} sec. Its disadvantage, low input impedance. Orig. art. has: 2 figures and 1 table.

SUB CODE: 09 / SUBM DATE: 29Apr64 / ORIG REF: 001 / OTH REF: 001

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Card 1/1

UDC: 681.142.6

CONFIDENTIAL

W. Laboratory : 1986. 1 pgs. 100-3-100-3
100-1600

SEP 17 1986

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123456, 123456, 123456

123456, V. A.; Okulov, B. V.; Otrubyannikov, Yu. A.
123456; Skorikov, A. G.; Shostakov, V. G.

123456 of starting a pulsed two-chamber stereo betatron.

123456 Izv. Tomskogo politehnicheskogo universiteta, v. 122, 1962, 50-51

123456 stereo betatron, pulsed stereo betatron, two channel
123456, ionization measurement, radiation dose power,
123456 ray intensity, stereo betatron radiation yield,
123456 along pulse

123456 two-channel pulsed stereo-betatron for 25 MeV with
123456 radiation intensity was started and put in operation

DOC. NO. BR4022437

The stereo-betatron beam amounts to only 5 roentgens, though the radiation yield of the stereo-betatron is 250--300 times larger than an existing betatrons of the same energy. The dimensions of the focus spot did not exceed 4 x 2 mm in the right-hand accelerator chamber, and 10 x 1 mm in the left. The number of accelerated electrons is 2.5×10^{11} . V. Voronin.

DATE ACQ: 03Mar64

SUB C: A, SD

ENCL: 00

Page 3/3

L 25069-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pab-10/Pt-10 IJP(c)
S/0275/64/000/007/A051/A051

ACCESSION NR: AR4045745

SOURCE: Ref. zh. Elektronika i yeye primeneniye. Svodnyy tom, Abs. 7A298 ³⁶_B

AUTHOR: Moskalev, V. A.; Skvortsov, Yu. Zh.; Okulov, B. V.; Shestakov, V. G.

TITLE: Measurement and recording of fall current in a 25-Mev stereobetatron ¹⁹

CITED SOURCE: Sb. Elektron. uskoriteli. M., Vyssh. shkola, 1964, 204-209

TOPIC TAGS: betatron, stereobetatron

TRANSLATION: Results of a study of acceleration process and beam characteristics are reported. Possibility is considered of determining the charge of accelerated electrons by a direct measurement of the charge of the electrons that struck the target. For measuring the accelerated-electron charges, a combination circuit is used which records simultaneously the target current and the signal induced in a special indicating electrode; the circuit can operate at any particle energy. Stereobetatron potentialities as a pulse flow detector were assessed by using it for examination of a lead bar having artificial defects. The circuits are supplied, and the experimental results are discussed.

SUB CODE: NP

ENCL: 00

Card 1/1

ACCESSION NR: AP4041009

S/0120/64/000/003/0032/0033

AUTHOR: Moskalev, V. A.; Shestakov, V. G.; Okulov, B. V.; Skvortsov, Yu. M.

TITLE: Method for measuring accelerated charge in a betatron

SOURCE: Pribery* i tekhnika eksperimenta, no. 3, 1964, 32-33

TOPIC TAGS: betatron, betatron measurements, betatron accelerated charge

ABSTRACT: A combined -- direct and indirect -- method for measuring a charge developed by the authors (registration no. 34311, priority of 01Feb63) is briefly described. The target current pulse is recorded simultaneously with a signal induced in a special "indicating electrode." At an energy under 1 Mev, the electrode signal is calibrated directly and then the calibration is used for measuring the charge with any energy. Two oscillograms taken at 0.5 and 25 Mev illustrate the method. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 07Jun63

ENCL: 00

SUB CODE: NP

NO REF SOV: 005

OTHER: 002

Card 1/1

SHESTAKOV, V.G.; SHABANOVA, Z.A.; PROKOF'YEV, M.A.

Properties of methyl ester of P^1 -(adenosine-5')-diphospho-
($P^2 \rightarrow N$) phenylalanine. Biokhimiia 29 no.4:690-696 J1-Ag
(MIRA 18:6)
'64.

1. Laboratoriya khimii nukleinovyykh kislot khimicheskogo
fakul'teta Gosudarstvennogo universiteta imeni Lomonosova,
Moskva.

SOMOV, G.P.; SHESTAKOV, V.I.

Spontaneous infection of *Haemaphysalis japonica douglasi* Nutt. and Wart.
ticks by rickettsia of *Dermacentor sibiricus* in Maritime Territory.
Zhur.mikrobiol., epid. i immu. 40 no.12:51-56 D 1973. (MIRA 17:17)

1. Iz Vladivostokskogo instituta epidemiologii, mikrobiologii i gigieny.

SHESTAKOV, V.I.;

Further study on the ecology of mosquitoes living in the cavities of
the southern Maritime Territory. Zool. zhurn. 43 n. 7:1081-1082 '64.
(MIRA 17:12)

1. Research Institute of Epidemiology, Microbiology and Hygiene.
Vladivostok.

АБЕТИКУЛ. М.А. ШИРАДОВА, С.А., ПРОКОП'ЙЕВ, М.А.

Study in the kinetics of ABPhamino acid hydrolysis. *Biokhimiya*
(MIRA 18:6)

L. Laboratoriya Khimii nukleinsykh kislot khimicheskogo
tsentra Rossiyskogo universiteta imeni Lomonosova,
Moskva.

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"... .. from two-
... .. (A-B ...)", (1 degree
... ..). Vol 6, 10 2.

... .. (1/12).

SHESTAKOV, V. I.

Algebra dvukhpolyusnykh skhem, postroyenny kh isklyuchitel'no iz dvukhpolyusnikov (algebra A-skhem). Zh. Tekhn. fiz., 11:6 (1941).

SO: Mathematics in the USSR, 1917-1947
edited by Kurosh, A.G.,
Markushevich, A.I.,
Rashevskiy, F.K.
Moscow-Leningrad, 1948

SHES T A K O V, V.

Shestakov, V. Representation of characteristic functions of propositions by expressions realizable by relay-contact circuits. Bull. Acad. Sci. URSS. Sér. Math. [Izvestia Akad. Nauk SSSR] 10, 529-554 (1946). (Russian. English summary)

The function $\omega_a(p)$ of the proposition p is defined by $\omega_a(p) = \omega$ if p is true and $\omega_a(p) = \alpha$ if p is false; $\omega_a(p) = [p]$. Then $[\sim p] = [p]^{-1}$; $[p \vee q] = [p] + [q]$; $[p \cdot q] = [p] \cdot [q]$, where $x \cdot y = (x^{-1} + y^{-1})^{-1}$. On the other hand, let Cx designate the conductivity of an electric contact, so that $Cx = \infty$ when x is shut and $Cx = 0$ when x is open. Then $(Cx)^{-1} = Cy$ if y is a contact which is open when x is shut and inversely; $Cx + Cy$ is the conductivity of x and y in series; $Cx \cdot Cy$ that of x and y shunted. Thus to every expression f from the calculus of propositions, built up with the variables p_1, \dots, p_n by means of negation, conjunction and disjunction, an electric circuit R , consisting of contacts and relays, may be constructed, such that (1) to every p_i corresponds a contact x_i in R ; (2) R contains a contact z such that, for every system of truth-values $(\infty, 0)$ of the p_i , if the x_i are so placed that $Cx_i = [p_i]$ ($i = 1, \dots, n$), then $Cz = [f]$. By the relation $\omega_a(p) = \omega \cdot [p] + \alpha \cdot [p]^{-1}$ this result is extended to the functions $\omega_a(p)$. A further extension to n -valued logic is obtained by using n -position switches. A. Heyting.

Source: Mathematical Reviews,

Vol 8 No. 8

SHESTAKOV, V.I.

Shestakov, V. I. Modelling the operations of the propositional calculus by means of the simplest four-pole networks. *Vychisl. Mat. Vychisl. Tehn.* 1 (1953), 56-89. (Russian)

The author discusses various ways of representing operations of propositional algebra by combinations of circuit units. Three kinds of such units are considered, viz. two-pole units, four-pole units, and commutators. A two-pole unit is simply an admittance between two terminals; for the representation considered the admittance is either 0 (open circuit) or ∞ (short-circuit). A four-pole unit is a device with two input and two output terminals; the representation can be in terms of either the voltage ratio or the current ratio of output to input; the situation lends itself to representation in terms of 0 and 1. A commutator is a four-pole unit such that the output is either the same as the input or is the same with reversed polarity; this lends itself to identification of truth and falsity with 1 and -1. The paper discusses the basic logical connections and a suitable algebraic expression in all these cases. At the end there is a discussion of the design of a binary adder. (The treatment is elementary and clear; its newness the reviewer is not able to judge.)

H. B. Curry (University Park, Pa.)

1-F/W

MAMONOV, Ye.I., [translator]; SADOVSKIY, L.Ye. [translator]; KHETAGU-
ROVA, Ya.A. [translator]; SHESTAKOV, V.I., redaktor.

[Synthesis of electronic computing and control circuits] Sintez
elektronnykh vychislitel'nykh i upravliaiushchikh skhem. Perevod
s angliiskogo E.I.Mamonova, L.E.Sadovskogo i IA.A.Khetagurova.
Pod red. V.I.Shestakova. Moskva, Izd-vo inostrannoi lit-ry, 1954.
357 p. (MLRA 7:8)

(Electronic calculating machines)

SHESTAKOV, V. I.

Algebraic Method of Analysis of Autonomous Systems of Two-Position Relays.
Avtomatika i telemekhanika, Vol 15, No 2, 1954, pp 107-123

Any group of relays together with its governing and governed parameters is called a relay system. The author investigated processes which are possible in an autonomous relay system with identical lags T during wear and loosening. Such a system is described by n equations $y_k(t) = f_k(y_1(t - T), \dots, y_n(t - T))$. The author also uses vector notation somewhat different from the standard.
(RZhMat, No 5, 1955)

SO: Sum. No. 639, 2 Sep 55

CHLAVAROV, V. I.

"Algebraic method for synthesizing autonomic systems of two-position relays",
Avtomatika i Telemekhanika, Vol 15, No 3,4,5, 1954

Abs

W-31148, 7 Feb 55

SHESTAKOV, V. I.

USSR

Shestakov, V. I. On transformation of a monocyclic sequence into a recurrent one. Dokl. Akad. Nauk SSSR (N.S.) 98, 541-544 (1954). (Russian)
The author considers a sequence of n -digit binary integers

$\eta(0), \eta(1), \eta(2), \dots$

1 - F/W

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which are ultimately periodic but are subject to the conditions that the initial non-periodic part together with the proper period consist of distinct integers. Such a sequence is produced when

$$\eta(i+1) = \phi(\eta(i)),$$

where ϕ is a single-valued function whose values are integers $< 2^n$ (a condition not explicitly stated by the author). Conversely, any sequence η of the above type determines such a function ϕ . Mention is made of an application to a system of n relays presumably of a digital computer. If the i th relay is energized at the j th program step then we may take the i th digit of $\eta(j)$ to be 1, otherwise it is zero. The system of relays is thus equivalent to a function ϕ . The author states that his theory extends to the case of $n \rightarrow \infty$.

D. H. Lehmer (Berkeley, Calif.).

SESTAKOV, V. I.

USSR

✓ Sestakov, V. I. An algebraic method of synthesis of multi-step relay systems. Dokl. Akad. Nauk SSSR (N.S.) 99, 987-990 (1954). (Russian)

I - F/W

MS
62 The author is concerned with the design of relay systems presumably for a digital computer. He uses a vector representation method in which the components are elements of a Boolean algebra and the three operations

$$\begin{aligned} u' &= 1 - u, \\ u \cdot v &= uv, \\ u \oplus v &= u + v \pmod{2} \end{aligned}$$

applied termwise to these vectors to construct characteristic functions for the expansion of a desired relay function. The treatment is only general and full of obscurities. Reference is made to the paper reviewed above. D. H. Lehmer.

SESTAKOV, V. I.

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress (Cont.) Moscow, Jun-Jul '56, Trudy '56, V. 1, Sect. Rpst., Izdatel'stvo AN SSSR, Moscow, 1956, 237pp. There are 2 references, 1 of which is USSR, and another is English.

Tseytin, G. S. (Leningrad). Problem of Identification of the Properties of Associative Calculus. 189

Mention is made of Markov, A. A.

There are 2 references, both of them USSR.

Shanin, N. A. (Leningrad). On Constructive Understanding of Mathematical Reasoning. 189-190

Mention is made of Kolmogorov, A. N.

There are 2 references, 1 of which is USSR, and the other English.

Shestakov, V. I. (Moscow). Vectorial-algebraic Method Applied to the Analysis and Synthesis of Multicycle Relay Systems. 190-191

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APPROVED FOR RELEASE: 07/13/2001

CARD 1/2

PA - 1942

SUBJECT

USSR / PHYSICS

AUTHOR

SESTAKOV, V. I.

TITLE

An Algebraic Method for the Synthesis of Multicycle Systems of Relays with r Positions.

PERIODICAL

Dokl. Akad. Nauk, 112, fasc. 1, 62-65 (1957)
Issued: 2 / 1957

Here the previously suggested vector-algebraic method for the synthesis of multicycle relay systems is generalized for systems which are based on relays with r positions. Here r denotes a natural number ≥ 2 . All previously introduced definitions can easily be generalized for the case $r > 2$. While all previous (V. I. SESTAKOV, Dokl. Akad. Nauk 99, No 6 (1954) denotations and conditions are retained the modifications of state of the nonautonomous system can as before be described by the following vector equation:
 $\vec{y}(t+r) = \vec{f}(\vec{x}(t), \vec{y}(t))$. Here \vec{f} denotes a certain univocal vector function of the vectors \vec{x} and \vec{y} which can apparently assume r^m and r^n values \vec{x}_α and \vec{y}_β respectively. These values are numbered by the following whole numbers:

$\alpha = \sum_{i=1}^m a_i r^{i-1}$, $\beta = \sum_{k=1}^n b_k r^{k-1}$, where a_i and b_k denote the i-th and k-th component respectively of the values \vec{x}_α and \vec{y}_β of the variable vectors \vec{x} and \vec{y} respectively. With $r = 1$ and after replacing the continuous variable t (time) by the natural variables j (j = 0, 1, 2, ...) the following equation is obtained by combining \vec{x} and \vec{y} to one single vector \vec{z} : $\vec{y}(j+1) = \vec{F}(\vec{z}(j))$. Here \vec{F} de-

SHESTAKOV V. I.

24-2-28/25

All-Union Conference on the Theory of Relay Systems
(Vsesoyuznoye soveshchaniye po teorii ustroystv s rel'eyami)

ABSTRACT: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, No.2, pp. 167-168 (USSR).

ABSTRACT: The Institute of Automation and Telemechanics of the Ac. Sc. USSR (Institut Avtomatiki i Telemekhaniki Akademii Nauk SSSR) convened in October, 1957 an All Union Conference on the theory of relay systems. The aim of the conference was to evaluate the present state of the problem of the theory of relay operation, particularly evaluation of the problems of synthesis, analysis and transformation of the structure of relay equipment, optimum construction and assembly of such structures, automation of the processes of synthesis and analysis of such structures. Over 320 representatives of research establishments, works' laboratories and project organizations from numerous centres of the USSR as well as scientists from Roumania, Hungary and Czechoslovakia participated in the conference. In his opening address M. A. Gavrilov reported on the

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Conference on the Theory of Relay Systems. 24-25-26/12
 present state and the main trends of development of
 the theory of relay circuits.
 Thirty papers were read including "On the Development
 of Mathematical Logic and its Engineering Applications"
 by S. A. Yanovska, "Algebraic Theory of the Operation
 of Relay-Contact Circuits" by Gr. K. Moisil (Bucharest),
 "On the Inversion Complexity of a System of Functions"
 by A. A. Markov, "Minimum Disjunctive Shape of 'Bull'
 Functions" by K. Popovich (Bucharest), "On Certain
 Mathematical Problems of the Theory of Relay Circuits"
 by S. V. Yablonskiy.
 The technique of operation in this field was dealt with
 in the following papers: "Technique of Determining the
 Minimum Number of Relays Necessary for the Construction of
 a Relay Circuit with Given Conditions of Operation" by
 V. G. Lazarev; "Matrix Method and Method of Characteristic
 Functions in the Theory of Contact Circuits" by
 F. Svobodin (Prague); "Construction of Relay Circuits
 with Bridge Connections" by M. A. Gavrilov; "Method of
 Synthesis of Multi-Pole Relay-Contact Circuits" by
 V. N. Grebenshchikov; "Application of the Method of

International Conference on the Theory of Relay Systems.
Probability Graphs for the Analysis of Switching Circuits
by A. D. Kharkevich; "Graphical Method of Construction of
Relay-Contact Circuits" by Ya. I. Mekien; "On the
Algebraic Method of Analysis and Synthesis of Multi-
Contact Relay Circuits" by V. I. Shestakov. The
following papers dealt with acute topics:
"Automation of the Process of the Analysis of Relay
Circuits" by P. R. Parkhomenko; "Matrix Analyser of
Relay-Contact Circuits" by T. T. Tsukanov; "Mechanisation
of the Process of Synthesis of Relay Circuits" by
A. A. Arkhangel'ska, V. G. Lazarev and V. N. Roginskiy;
"The Szeged Logical Machine and Some of its Applications"
by L. Kalmar (Hungary). The participants of the
conference arrived at the conclusion that in the field
of synthesis of relay equipment the fundamental problem
is that of developing a method of determining the most
rational structures. Existing methods solve fundamentally
the problem of creating a structure of relay equipment in
accordance with exactly formulated conditions of operation
for complicated relay systems containing a large
number of blocks, the existing methods are
not applicable for general

Card 4/5

...ference on the Theory of Relay Systems. The investigation of symbolic recording of the conditions of operation for determining the existing relations and particularly for developing methods of sub-dividing the general sequences into sequences corresponding to the various functions to be fulfilled and synthesis of relay equipment in sections. In some cases, the statistical characteristics of individual connections being occupied has to be taken into consideration. An important problem of the theory of relay systems is that of minimising the size of their structure. In view of the complexity of the structures of modern relay systems it is of great importance to develop automatic machinery for synthesis and analysis of relay apparatus and the first successes achieved in this field were reported on at the Conference of the Institute of Automatics and Telemechanics, Ac.Sc. USSR has developed a universal machine for analysing the structure of relay systems on twenty relay elements which permits solution of a very wide class of problems. In the Computer Institute of the Czechoslovak Ac.Sc. and in the Laboratory of Problems of Wire Communication of the Ac.Sc. USSR, the first machines were built for synthesis

of structures of relay equipment, particularly as regards machine
further development, for the synthesis of structures. The members of the
conference pointed out the advisability of organizing
a coordinating commission relating to work on the theory
of relay systems and of establishing an International
Federation relating to this problem.

(Note: This is a complete translation).

AVAILABLE: Library of Congress.

SHESTAKOV, V. I.

"The Algebraic Method of Analysis and Synthesis."

report presented at All-Union Conference on Problems in the Theory of Relay Devices,
Inst. for Automation and Remote Control AN USSR, 3-9 Oct 1957.
Vestnik AN SSSR, 1958, No. 1, v. 28, pp. 131-132 (author Ostianu, V. M.)

SHESTAKOV, V.I. (Moskva)

Mathematical logic and automatic control. Mat. v shkole no.6:4-20
(MIRA 11:12)

N-D '58.

(Logic, Symbolic and mathematical) (Automatic control)

AUTHORS: Shestakov, V. I., Terent'yev, D. F. SOV/64-58-6-3/5

TITLE: The Determination of Optimum Temperature Conditions of Running Contact Apparatus for the Oxidation of Sulfur Dioxide
(Opredeleniye optimal'nogo temperaturnogo rezhima deystvuyushchikh kontaktnykh apparatov dlya okisleniya lyukhisi sery)

PERIODICAL: Khimicheskaya promyshlennost', 1958, Nr 6, pp 350-354 (USSR)

ABSTRACT: Optimum conditions for contact apparatus with adiabatic catalyst layers are determined according to the method developed by G. K. Borekov (Ref 1). During the operation of the apparatus the activity of the catalyst decreases. Therefore, an excess of contact substance is generally used; however, this excess is limited since its presence results in an increase of the hydraulic resistance and thus causes efficiency to decrease. If the activity of the contact substance is reduced by the two- or threefold, the operation of the contact apparatus is disturbed and a redetermination of optimum operating conditions considering the actual state of the catalyst, becomes necessary. The present paper deals with the solution of this problem. The determination of the optimum operation (for each layer separately) was carried out according to the

Card 1/2

SOV/64-98-6-3/15

The Determination of Optimum Temperature Conditions of Running Contact Apparatus for the Oxidation of Sulfur Dioxide

graphic method. The diagrams in question are given. Inter alia, the calculation is given for an apparatus of the K-39-4 type. On principle, the diagrams refer to contact substances which already have been used for some time and have lost part of their effectiveness. If there is a new contact substance the diagrams make it possible to evaluate the quality of the material in question. New substances should be used in the first two layers in quantities which guarantee a contact from the ignition to a point near the equilibrium. That is why the initial temperature should not be increased, since this would lead to a lessening of the effect. There are 3 figures, 1 table, and 3 references, which are Soviet.

Card 2/2

103-19-6-8/13

AUTHOR: Shestakov, V. I. (Moscow)

TITLE: A Method of Punched Cards for the Synthesis of Switching Systems (Perfokartochnyy metod sinteza mnogotaknykh releynykh sistem)

PERIODICAL: Avtomatika i telemekhanika, 1958, Vol 19, Nr 6, pp 592 - 605 (USSR)

ABSTRACT: One of the simplest methods for the mechanization of the vector-algebraic method for the synthesis of switching systems is given here. The method is based on the use of special cards and was therefore called the method of punched cards for the synthesis of switching systems. It is assumed here that the reader is acquainted with the vector-algebraic method of the synthesis of switching systems. Therefore only little information is given on this method. Then the use of special cards for the synthesis of autonomous relay systems and the realization of the synthesis of non-autonomous relay systems by means of special cards is explained in two chapters. At the end it is pointed out that the synthesis of autonomous systems can also be performed by means of cards β destined for the synthesis of non-

Card 1/2

A Method of Punched Cards for the Synthesis of
Switching Systems

103-19-6-3/13

autonomous switching systems. On this occasion the cards α
(for the synthesis of autonomous switching systems) are not
used and only the cards β are used in the same manner as cards
 α . There are 9 figures, 1 table, and 10 references, 4 of which
are Soviet.

SUBMITTED: December 26, 1957

1. Switching circuits--Synthesis

Card 2/2

SHESTAKOV, V.I. (Moskva)

Mathematical logic and automatic control. Mat. v shkole no.1:
19-39 Ja-F '59. (MIRA 12:1)
(Logic, Symbolic and mathematical)
(Electronic calculating machines)

SHESTAKOV, V. I.

SOV/5083

PAGE 1 FOUR EXPLANATION

Akademiya nauk SSSR
Primeneniye logiki v nauke i tekhnike (Application of Logic in Science and Technology) [Moscow] Izd-vo AN SSSR [1960] 357 p.
Errata slip inserted. 10,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR.

Editorial Board: Resp. Ed.: I. V. Tavanets, E. Ya. Kol'man,
G. N. Pevarov and S. A. Yanovskiy; Ed. of Publishing House:
R. Yu. Rozenberg; Tech. Ed.: S. T. Markovich.

PURPOSE: This book is intended for scientists interested in mathematical and symbolic logic.

COVERAGE: The book is a collection of 16 articles in which the authors discuss problems of mathematical logic and its application to computers, linguistics, psychology, methodology and various fields of technology. No personalities are mentioned. References follow all but one article.

Paizov, Yu. V. Significance of the Axiomatic Method in the Study of Trends in Changes of Living Systems 173

Zinov'yev, A. A. Deductive Method in Investigating the Propositions of Relationship 215

X Zinov'yev, A. A. Generality Problem of Propositions of Relationships 243

Zinov'yev, A. A. One Variant of the Definition Theory 251

Pevarov, G. N. Group Invariance of Boolean Functions 263

Shestakov, V. I. Double Arithmetic Interpretation of the Many-Valued Calculation of the Propositions Used in Simulating This Calculation by Means of a Relay-Switching Circuit 341

Taetlin, M. I., and L. M. Shekhtman. Some Problems of Physical Realization of Systems Returning Logical Functions 377

Maystrova, D. T. Application of Many-Valued Logics in the Theory of Relay Systems 394

Paranov, G. M. Inductive and Deductive Aspects of Logic Connected with Logical Problems in Technology 415

Kedint, R. M. "Phase Method" in Formal Logic 421

Biryukov, R. V. Sense Theory of Gottlob Frege 502

AVAILABLE: Library of Congress

Card 4/A

AC/qmw/ec 10
5-12-61

SHESTAKOV, V.I.; SINENKO, S.A.

Study of bird's fleas in the foci of Japanese encephalitis.
Med.paraz.i paraz.bol. no.3:306-307 '61. (MIRA 14:9)
(ENCEPHALITIS) (PARASITES--BIRDS) (FLEAS)

82457

16,6800

S/141/60/003/03/012/014
E192/E382

AUTHOR: Shestakov, V.I.

TITLE: The Problem of Synthesis of Hybrid Π -Class Switching Systems

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika,
1960, Vol. 3, No. 3, pp 526 - 533

TEXT: Boolean algebra is quite adequate for the analysis and synthesis of switching systems of the Π -class, but it is insufficient in the structural analysis of the Π -class systems when these comprise relay coils and resistances as well as contacts, push buttons and keys. In the following, an attempt is made to investigate the applicability of the algebra and to determine such switching systems where the algebra is inadequate. A Π -class system can be uniquely described by means of an algebraic equation whose terms are interrelated by operations of addition and harmonic addition. The harmonic addition is described by:

$$X \cdot Y = (X' + Y')' \quad (1)$$

Card 1/4

82457

S/141/60/003/03/012/014

E192/E382

The Problem of Synthesis of Hybrid Π -Class Switching Systems

remaining systems are referred to as the single-relay hybrid systems. The principal hybrid systems are of the inverse-normal and normal-inverse type, since an arbitrary hybrid system can be reduced to one of the above types by means of suitable transformations. Thus, it can be shown by employing the distributive laws defined by Eqs (3) that a normal-inverse-normal system can be transformed into an inverse-normal and a normal-inverse system. The separable Π -class systems are defined as those systems containing n relays which can be divided into n independent single-relay two-pole sub-systems in such a way that when each of the two poles is connected to a separate supply source, its relay operates in the same way as in the original system. The separable systems are of the normal or inverse type or of the type defined by the first two equations on p 530. In these equations, G_k denotes the two-poles which have a finite impedance. It is shown that the analysis and the synthesis of n -relay separable Π -class systems can be carried out in the same manner as the analysis of n different Π -class systems and, consequently,

Card 3/4

SHESTAKOV, V.I.

Review of V.N. Roginskii's book "Elements of the structural
synthesis of switching control circuits." Avtom. i telemekh.
21 no.7:1090-1094 J1'60. (MIRA 13:10)
(Automatic control) (Switching theory)
(Roginskii, V.N.)

SHESTAKOV, V. I.

"Algebra of relay-switch circuits"

report submitted for the Intl. Symposium on Relay Systems and Finite Automata Theory (IFAC), Moscow, 24 Sep-2 Oct 1962.

SHESTAKOV, V.I.

Synthesis of a single-cycle binary number summator based on two-
positional commutators and polarized relays. Vop. teor. mat.
mash. no.2:232-239 '62. (MIRA 15:8)
(Switching theory) (Electric relays)
(Electronic calculating machines)

MASTAKOV, V.I.

Some epidemiological data on the resistance of the eggs and larvae of the mosquitoes *Aedes aegypti* and *Aedes koreicus* against freezing. Trudy VladTEMG no.2:38-39 '62. (MIRA 18-1)

1. Iz Vladivostokskogo nauchno-issledovatel'skogo instituta epidemiologii, mikrobiologii i gigieny.

ACC NR: AP6029183

SOURCE CODE: UR/0016/66/000/005/0008/0013

AUTHOR: Shestakov, V. I.; Mikheyeva, A. I.; Polenova, I. N.; Dorokhova, V. S.

ORG: Vladivostok Institute of Epidemiology, Microbiology and Hygiene (Vladivostokskiy institut epidemiologii, mikrobiologii i gigiyeny); Regional Sanitary Epidemiological Station (Krayevaya sanitarno-epidemiologicheskaya stantsiya)

TITLE: Prevention of Japanese encephalitis in Primorskiy Kray

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 5, 1966, 8-13

TOPIC TAGS: encephalitis, insect control, mosquito, disease control

ABSTRACT: In Khasanskiy Rayon, where Japanese encephalitis is endemic, systematic measures have been carried out since 1960 to control the mosquito vectors of the disease (*C. tritaeniorhynchus* G., *C. bitaeniorhynchus* G., *C. pipiens* L., *A. togoi* Theob., *A. esoensis* Jam.) and to protect the population from mosquito bites. The breeding places were sprayed from airplanes with DDT aerosols (10% dust and 50% paste). The best results were obtained by antilarval treatment of the biotopes in the early spring. The people were protected from insect bites with dimethylphthalate, repudin, and diethyltoluamide. The latter proved to be the most effective repellent. Orig. art. has: 3 tables. [JPRS: 36,932]

SUB CODE: 06 / SUBM DATE: 22Jul65 / ORIG REF: 005 / OTH REF: 001

Card 1/1 UDC: 616.988.25-022.395.7-084(5 1.63)

I 08708-67
ACC NR: AP6034113

2

(78%), *A. koreicus* (1%), and *A. esoensis* (2%). The population of *C. tritaeniorhynchus*, the chief vector of Japanese encephalitis in meadow foci, has decreased 30—40 times in recent years due to elimination of rice fields. In the coastal area, the chief species attacking man was *A. togoi*, and in fishing villages, *A. togoi* and *Culex pipens*. In the meadow areas the following species commonly attacked man: *A. dorsalis*, *A. vexans nipponi*, *A. esoensis*, *Anopheles hyrcanus*, and sometimes *Culiseta silvestris amurensis*. Effective mosquito control consisted of treating ponds with insecticides (coastal regions) and serial spraying (meadow foci). Orig. art. has: 1 table and 2 figures.

[W.A. 50]

SUB CODE: 06/ SUBM DATE: 10Aug65/ ORIG REF: 006

Card 2/2 nat

GANSHTAK, Vladimir Iosipovich; SHESTAKOV, V.M., inzh., retsenzent;
YUR'YEV, N.M., inzh., retsenzent; TKACHUN, A.I., red.izd-va;
MODEL', B.I., tekhn.red.

[Economic analysis of potentials in a machinery manufacturing
enterprise] Ekonomicheskii analiz rezervov na mashinostroi-
tel'nom predpriatii. Moskva, Gos.nauchno-tekhn.izd-vo mashino-
stroit.lit-ry, 1960. 263 p. (MIRA 13:12)
(Machinery industry--Accounting)

BELYY, V.A.; SHESTAKOV, V.M.

Using some polymers in the manufacture of sliding bearings. Sbor.
trud.Inst.mash.i avtom.AN BSSR no.2:93-115 '61. (MIRA 15:3)
(Plastic bearings)

SHESTAKOV, V.M. (Moskva)

Nonstationary percolation in a two-layer medium. Izv. AN
SSSR. Mekh. i mashinostr. no.6:93-96 N-D '63.

(MIRA 17:1)

SHESTAKOV, V.M.

Study of the performance of polyanide journal bearings. Plast.
massy no.6:44-47 '63. (MIRA 16:10)

SHESTAKOV, V. M.

Shestakov, V. M. - "On certain production methods in concrete work", Sbornik trudov
Studenich. nauch.-tekhn. o-va (Mosk. inzh.-stroit. in-t im. Kuybysheva), Moscow, 1949,
p. 27-35.

SO: U-411, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949).

SHESTAKOV, V. M.

Shestakov, V. M. and Shestopal, A. O. - "Leaks and the appearance of washouts in hydro-technical equipment", Sbornik trudov Studench. nauch.-tekhn. o-va (Mosk. inzh.-stroit. in-t im. Kuybysheva), Moscow, 1949, p. 41-48.

SO: U-411, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949).

3766. Shostakov, V. M. Calculating seepage in earth dams and barriers with fluctuating water levels (in Russian). *Gidrotekh. Stroit.* 22, 7, 36-39, July 1953.

The downstream water level is suddenly altered from one steady value to a different steady value. The transient motion of the water table inside a dam is studied, using Boussinesq's partial differential equation $(h^2)_t = (k/\mu)h(h^2)_{xx}$. This is linearized by replacing the undifferentiated symbol h with a parabolic expression in x correct at each face of the dam. The analytical solution so obtained, illustrated by graphs, should be an improvement on that of N.N. Verigin [Bull. source, no. 3, 1952] and agrees well with a "hydraulic integrator" solution for case of semi-infinite dam.

Transient flow development is expressed in terms of dimensionless time variable and is effectively complete for typical structures when $kt \sim 1m$. Author concludes that transient seepage effects are important for fine-grained but not medium-grained sands. Transient hydraulic gradient at downstream face, however, can always be important, and a method of calculation is given. (k is the transmission coefficient, μ the storage coefficient, the remaining notation being standard.)

A. H. Armstrong, England

SHESTAKOV, V. M.

✓ 593. Shestakov, V. M., Seepage forces in open cuts (in Russian), *Gidrotekh. Stroit.* 22, 10, 21-25, 1953.

In a cut of trapezoidal section, made in a layer of homogeneous porous material resting on an impervious stratum, the water level is lowered with velocity v . Problem considered (2-dim.) is to find seepage line and its intercept with discharge face. In case I, mere drainage is present; in case II, a line of deep wells is operating at some distance from edge of cut.

For several geometrical configurations experimental investigations show that problem can be reduced to the equation

$$(b^2)_t = kb/\mu \cdot (b^2)_{xx}. \quad [1]$$

For case I region is divided in two by vertical C through edge of cut. For upstream portion equation [1] is reduced (Bagrov-Verigin)

to the heat equation, assuming constant the factor of the derivative in x . Solution is immediate. For downstream portion, with the sloping face, use is made of correspondence method. An approximate value $b(x,t)$ is taken for b , and set into left side of [1], which is approximated to $b_t = k/2\mu \cdot (b^2)_{xx}$, and integrated. If $b=b$, solution is exact. If equality holds only at a few points, solution b is approximate. Procedure can be repeated, but equality at two points is sufficient for practical purposes, as shown by applications.

SHESTAKOV, V. M. . . .

Method applied is case I yields intercepts of seepage line with sloping face and with C . Expressions based on Pavlovski discharge-function φ are given for three cases corresponding to various depths of impervious bed. In case II is determined the relation between draw-down velocity and well discharge with the condition that hydraulic gradient be zero at the discharge face. An example of computation illustrates this procedure.

G. H. Beguin, Switzerland

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SHESTAKOV, V.M., kandidat tekhnicheskikh nauk.

Calculating seepage in earth dams and barriers at changing water levels.
Gidr.stroi. 22 no.7:36-39 J1 '53. (MLRA 6:7)

(Dams) (Soil percolation)

SHESTAKOV, V.M., kandidat tekhnicheskikh nauk.

Calculating curves of depression in earth dams during the lowering of
the water level of reservoirs. Gidr.stroi. 23 no.4:32-36 '54.
(Dams) (MLRA 7:7)

SHESTAKOV, V.M.

Determining filtration coefficients of anisotropic layers
on the basis of pumped test samples. Razved.i okh.nedr 21
no.6:52-55 N-D '55. (MLRA 9:12)

(Water, Underground) (Soil percolation)

4-17006 G.II.

Subject : USSR/Hydraulic Engineering Construction AID P - 1800

Card 1/1 Pub. 35 - 12/17

Author : Barenblatt, G. I. and Shestakov, V. M.

Title : Canal seepage into dry soil

Periodical : Gidr. stroi., v.24, no.1, 40-41, 1955

Abstract : A mathematical analysis of unstable ground water in an inclined uniform impervious layer during the instant change of level at the end of the layer as established by equations. Two diagrams are given. Four Russian references of 1945, 1952, 1952 and 1954.

Institution: None

Submitted : No date

SOV/124-58-1-908

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 1, p 121 (USSR)

AUTHOR: Shestakov, V. M.

TITLE: Determination of the Hydrodynamic Forces in Earth Structures and Slopes Due to the Lowering of the Water Levels in Head- and Tail-water Basins (Opredeleniye gidrodinamicheskikh sil v zemlyanykh sooruzheniyakh i otkosakh pri padenii urovney v b'yefakh)

PERIODICAL: V sb.: Vopr. fil'trats. raschetov gidrotekhn. sooruzheniy. Nr 2. Moscow, Gos. izd-vo lit. po str-vu i arkhitekt., 1956, pp 98-128

ABSTRACT: A brief review of methods (by R. Müller, F. H. Kellogg, V. M. Dombrovskiy, H. R. Cedergreen, E. Reinus, and I. A. Charnyy) for the approximate calculation of the hydrodynamic forces acting on the slopes of earth dams during variations in the water levels of the head- and tail-water basins. The author obtains an approximate solution for the case of the plane, one-dimensional, unsteady seepage of the ground water in a semi-infinite soil volume, where the boundary surface of the water basin is sloping. The draining-out interval on the boundary of the basin is not taken into consideration, and it is assumed that the depth of the water in the basin decreases

Card 1/2

SOV/112-57-6-12884

Translation from: Referativnyy zhurnal. Elektrotehnika, 1957, Nr 6, p 176 (USSR)

AUTHOR: Shestakov, V. M.

TITLE: Some Problems of Simulating Transient Seepage
(Nekotoryye voprosy modelirovaniya neustanovivsheysya fil'tratsii)

PERIODICAL: V sb.: Vopr. fil-trats. raschetov gidrotekhn. sooruzheniy. Nr 2.
M., Gos. izd-vo po str-vu i arkhitekt., 1956, pp 129-139

ABSTRACT: A similitude criterion is presented for simulating the problems of transient seepage by means of solid medium devices; it is pointed out that application of the above criterion is difficult because of the very small time scale involved that corresponds to a practically acceptable linear scale. Suggestions are made to simplify the simulation conditions by neglecting inertial terms; the above possibility is illustrated with an example of simulating the conditions of saturation of a dry ground massif under the conditions of a constant rate of lift of level at the boundary. The possibility is considered of investigating the seepage, allowing for the capillary zone, by means of a soil

Card 1/2

SHESTAKOV, V.M.

Calculating filtration in a three-layer medium. Gidr. stroi.
25 no.4:52-54 My '56. (MLRA 9:9)

(Soil percolation) (Dams)

SHESTAKOV, V.M.

Unsteady seepage through slanting impervious rocks. Dokl. AN SSSR
108 no.5:791-794 Je '56. (MLRA 9:10)

1. Predstavleno akademikom L.I. Sedovym.
(Soil percolation)

98-58-3-19/22

AUTHOR: Shestakov, V.M., Candidate of Technical Sciences.

TITLE: Conference on Questions of Water Level Lowering in a Hydro-technical Installation (Soveshchaniye po voprosam vodoponi-zheniya v gidrotekhnicheskoy stroitel'stve)

PERIODICAL: Gidrotekhnicheskoye Stroitel'stvo, 1958, ²⁷ Nr 3, pp 61-62 (USSR)

ABSTRACT: At the end of 1957, a conference took place in the VNII VODGEO dealing with questions of water level lowering during hydro-technical construction work. In this conference participated representatives of the GIDROSPETSPROYEKT, GIDROPROYEKT, GIDRO-ENERGOPROYEKT, VODOKANALPROYEKT, FUNDAMENTPROYEKT, VNII VODGEO, NII of Foundations and Underground Constructions imeni Vede-neyev, TNISGEI, VSEGINGEO, Stalingrad Hydroelectric Power Station, and others. Reports made by M.P. Semenov, A.G. Lykoshin, O.N. Nosova, A.P. Korzhetskiy, V.D. Babushkin, V.M. Nasberga, G.K. Mamenko, dealt with questions of geologico-hydrological conditions, and means of lowering the water level. Reports made by M.N. Pavlovska, V.M. Shestakov, N.N. Verigin and P.M. Bochever, dealt with calculations of filtration in water level lowering installations. Reports of F.I. Emel'yanov

Card 1/4

98-58-3-19/22

Conference on Questions of Water Level Lowering in a Hydrotechnical Installation

P.I. Volodenkov, M.F. Khasin, L.N. Vorobkov, P.V. Lobachev, D.G. Shneyder and P.V. Tsyurupa dealt with projects and installation of water level lowering. In the course of the discussion it became evident that water level lowering being an item involving considerable expense, ways and means should be found to improve the work while lowering the cost. The question of combining deep level draining with surface drainage was one of the most discussed points. As a result of the conference the following recommendations were submitted: 1) special investigation should be conducted to determine filtration characteristics in various kinds of soil and the influence of filtration on the sand base under varying hydro-geological conditions. 2) considering the numerous proposals which exist in regard to calculations of water level lowering, a complete and methodical survey should be made of all literature on the subject. The institutes VODGEO, VNIIG and VNIIOSP should participate in this work. 3) the question of combining deep level draining with open drainage requires further inve-

Card 2/4

98-58-3-19/22

Conference on Questions of Water Level Lowering in a Hydrotechnical
Installation

stigation, especially in such cases where the foundation pit crosses the water head in sandy soil. 4) greater attention should be paid to the organization of piezometric observations. 5) in view of the fact that large dredging machines operating in close vicinity to the water head interfere with the foundation soil, it would be advisable for GIDROPROYEKT to investigate the situation with a view toward limiting the distance from the installation at which dredges are permitted to operate. 6) economic problems, in connection with water level lowering should be studied by organizations in charge of projects, in cooperation with scientific-research institutes. Special attention should be paid to the cost of deep level draining as compared with cost of open drainage. The general aim is to lower the cost of water level lowering, as well as of the entire complex construction work carried out under the protection of water level lowering installations. 7) in connection with water level lowering work it would be advisable to adopt a standard mobile set of pumping devices of the LIU type, having a capacity of 30-140 m³/hr and a 5.5 to 20 kw motor. 8) other

Card 3/4

98-58-3-19/22

Conference on questions of Water Level Lowering in a Hydrotechnical Installation

methods of water level lowering should also be investigated, such as drawing water from soil or by means of electroosmosis. 9) finally it was deemed necessary to work out new technical conditions for water level lowering in hydrotechnical installations.

Card 4/4

1. Dams--Construction
2. Dams--Design
3. Power plants--Construction
4. Dams--Costs

KORZHETSKIY, A.P., inzh.; VERIGIN, N.N., doktor tekhn.nauk, prof.; BINDEMAN, N.N., kand.geol-mineral.nauk; BOCHEVER, F.M., kand.tekhn.nauk; GRIGOR'YEV, V.M., kand.tekhn.nauk; REDRIGA, V.P., kand.tekhn.nauk; SHESTAKOV, V.M., kand.tekhn.nauk.

Opinions of the book "Determining water inflow to foundation pits and designing drainage installations" by V.V. Kurilenko. Reviewed by A.P. Korzhetskii and others. Gidr. stroi. 27 no.4:61-64 Ap '58. (MIRA 11:9)

(Soil percolation) (Drainage) (Kurilenko, V.V.).

SHESTOPAL, Aleksandr Osipovich, inzh.; FUKSON, M.M., kand.tekhn.nauk, retsenzent; SHESTAKOV, V.M., kand.tekhn.nauk, retsenzent; ENGEL', F.F., inzh., retsenzent; PETROV, G.D., inzh., nauchnyy red.; ORLOV, A.G., inzh., nauchnyy red.; MAR'YANSKIY, L.M., inzh., red.; AKULOV, D.A., tekhn.red.

[Using hydraulic methods in submerging pipes, piles, and pile planks] Gidravlicheskoie pogruzhenie trub, svai i shpunta. (MIRA 13:6)
Moskva, Gidroproekt, 1959. 67 p.
(Pipelines) (Piling (Civil engineering))

SEMENOV, M.P., prof., red.; GRIGOR'YEV, V.M., starshiy nauchnyy sotrudnik, red.; SHESTAKOV, V.M., starshiy nauchnyy sotrudnik, red.; SMIRNOVA, A.P., red.izd-va; EL'KINA, E.M., tekhn.red.

[Transactions of the Conference on Problems of Water Table Lowering in Hydraulic Engineering] Trudy Soveshchaniya po voprosam vodoponizheniya v gidrotekhnicheskom stroitel'stve. Moskva, Gos.izd-vo lit-ry po stroit.arkhit. i stroit.materialam, 1959. 190 p. (MIRA 12:9)

1. Soveshchaniye po voprosam vodoponizheniya v gidrotekhnicheskom stroitel'stve. Moskva, 1957. 2. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya, kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy gidrogeologii (Vodgeo) (for Semenov, Shestakov).
(Drainage) (Hydraulic engineering)

SOV/24-59-1-16/35

AUTHOR: Shestakov, V.M., (Moscow)

TITLE: Determination of the Leakage Zone of the Percolation Flow Near the Walls of Wells (Opredeleniye uchastka vysachivaniya fil'tratsionnogo potoka u stenki skvazhiny)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, Energetika i Avtomatika, 1959, Nr 1, pp 110-111 (USSR)

ABSTRACT: The following relationship, based on an equation due to Charnyy (Ref 3) is proposed:

$$\eta = \frac{h_k^2 - h_c^2}{Q_0} = 0.73 \lg \frac{\sqrt{Q_0}}{r_c} - 0.51 \quad (7)$$

where $h_k = h_c + h_o$; h_c = level in well, h_o = height of leakage zone; Q_0 = discharge from well and r = radius of well. This relationship is plotted in the figure (p 111) and compared with measurements of Soviet and other workers. The agreement is sufficiently close to justify the use of the relationship for practical

Card 1/2

SOV/24-59-1-16/35

Determination of the Leakage Zone of the Percolation Flow Near the Walls of Wells

calculations. There is 1 figure, 1 table and 6 references of which 2 are English, 1 French and 3 Soviet.

SUBMITTED: 29th May 1958

Card 2/2

SHESTAKOV, V.M.

Determining outflow gradients for percolating flow near the
slop. Vop.fil'tr.rasch.gidr.soor. no.3:185-216 '59.
(MIRA 13:5)

(Soil percolation) (Drainage)

SOV/98-59-10-11/20

30(1)
AUTHOR: Shestakov, V.M., Candidate of Technical Sciences
TITLE: The Filtration Resistance of Sand Slopes
PERIODICAL: Gidrotekhnicheskoye stroitel'stvo, 1959, Nr 10, pp 41-44 (USSR)
ABSTRACT: The article deals with 2 kinds of filtration resistance in the sand slopes of the foundations of hydroelectric constructions or earth dams, one where the slope is not protected and is subject to the depositing of alluvium by the filtration stream, and the other where the slope is protected by a filter from being thus affected. Mention is made of certain leading names in research in this field: N.N. Verigin, V.V. Aristovskiy, J. Ohde, W. Bernatzik, I.F. Volod'ko, and B.I. Pokrovskiy. The author goes on to describe tests carried out at the VODGEO (All-Union Scientific Research Institute of Water Supply, Pipelines, Hydraulic Construction and Engineering Hydrogeology) and also on-the-spot research conducted on the Kuybyshev and Stalingrad GES (Ref.5). The amounts of alluviation is fixed as being the length of the alluviation tongue 1 (see fig.1),

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$$J_c = \frac{h_B}{J_0} \quad (1)$$

where h_B is the height of the leak and J_c is the average angle of slope of the alluviation: $J_c = \chi J_0$, (2)

where J_0 is the angle of inclination of the undeformed slope, and χ is the coefficient dependent on the streamflow over the slope q_0 and the diameter of the pebbles d . The 2 graphs for the determination of χ , depending on the size of the streamflow, are given in fig.2, while d is determined by the formula

$$(d_{50} + .017) \sqrt[3]{\frac{d_{90}}{d_{50}}} = .017 \text{ (cm)} \quad (4)$$

where d_{90} is the size of the particles of which the earth contains less than 90% (in weight). The height of the leak h_B for slopes on an impervious foundation is fixed according to G.K. Mikhaylov's

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formula
$$h_B = (m + .5) \frac{q_0}{k}, \quad (5)$$

where k is the coefficient of filtration of the earth, and m is the estimated amount of deposit on the slope. Hence the length of the tongue of alluviation l may be calculated according to formula (1). In the case of slopes with pervious foundations of power T , the value q_0 may be related to the height of the leak h_B thus:

$$\frac{q_0}{k} = \frac{h_B + .75T}{T + (m + .5) h_B} h_B. \quad (7)$$

On the other hand, the relation has previously been established between h_B and the complete discharge of the filtration stream q , so that

$$h_B = \sqrt{.25(T - \frac{mq}{k})^2 + .45 \frac{q}{k} T - .5(T - \frac{mq}{k})}, \quad (8)$$

where

$$\frac{q}{k} = \frac{H(H + 2T)}{2L}. \quad (8a)$$

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With the aid of equations 7 and 8, a graph can be drawn to illu-

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strate the relation between $\frac{q_0}{q}$ and $\overline{mq} = \frac{mq}{kT}$ (Fig.3). It can also happen that alluviation of the filtering part of the slope tends to deform the slope as a whole, and the amount of this deformation is determined by the formula

$$\Delta l = \frac{h_B^2}{2H_0} \left(\frac{1}{J_c} - \frac{1}{tg\varphi} \right) . \quad (9)$$

The best solution is to install a filter layer at the leak point, but the author criticizes the methods advocated by V.S. Istomina (Ref.8) and B.I. Pokrovskiy. The lay-out used in tests to determine the importance of the size of the particles and the stream-flow in the filter is given in fig.4; the material used for the slope remained constant ($d_{10} = .12$ mm, $d_{50} = .18$ mm), while the composition of the filtration layer changed; the results are given in the table on page 43. On the basis of these tests the author recommends the formula

$$\frac{D_{10}}{d_{50}} < 15-20 \quad (10)$$

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for the protection of slopes, and proposes that V.S. Istomina's graphs be used. The safe thickness of the filter layer is calculated as

$$\alpha_o = \alpha + \frac{k}{k_{pr}} h_B, \quad (11)$$

where k_{pr} is the coefficient of filtration of the filtration layer (Fig.5). There are 3 graphs, 2 diagrams, 1 table, and 8 references, 6 of which are Soviet, and 2 German.

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PHASE I BOOK EXPLOITATION

Vorobkov, Lev Nikolayevich, Vladimir Matveyevich Gavrilko, Petr Vladimirovich Lobachev, and Vsevolod Mikaylovich Shestakov

Vodoponizheniye v gidrotekhnicheskoy stroitel'stve (Lowering the Water Table in Hydrotechnical Construction) Moscow, Gosstroyizdat, 1960. 243 p. Errata slip inserted. 4,000 copies printed.

Scientific Ed.: Yu. G. Trofimenkov, Candidate of Technical Sciences; Ed. of Publishing House: P. V. Safonov; Tech. Ed.: Ye. L. Temkina.

PURPOSE: This book is intended for engineering and technical personnel in hydrotechnical construction who are occupied with problems of lowering water tables. The book may also be of interest to mining personnel.

COVERAGE: The authors discuss the designing and calculation of systems for lowering water tables. They deal chiefly with

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Lowering the Water Table (Cont.)

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large systems used in excavations for water works. Problems in installing the lowering apparatus are discussed. Special attention is given to the method using deep wells. Considerable space is given to the question of designing drainage systems for open-cut mine workings. L. N. Vorobkov wrote Sec. 1 of Ch. I, Sec. 1 of Ch. II, Sec. 1 of Ch. IV, and Secs. 1 and 2 of Ch. VII. V. M. Gavrilko wrote Ch. V and Secs. 1, 2, 3, 5, and 6 of Ch. VI. P. V. Lobachev wrote Secs. 3 and 4 of Ch. II; Secs. 2 and 3 of Ch. IV, and Sec. 4 of Ch. VII. Secs. 2 and 3 of Ch. I, Ch. III, and Sec. 4 of Ch. VI were written by V. M. Shestakov. Sec. 3 of Ch. VII was based on materials supplied by Engineer A. O. Shestopal. The authors thank Candidates of Technical Sciences V. M. Grigor'yev and Yu. G. Trofimenkov for their assistance. There are 100 references: 87 Soviet, 5 German, 6 English, and 2 French.

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(MIRA 13:7)

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i nauchno-issledovatel'skogo instituta "Gidroproekt" imeni S.Ya.
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Presented at the Symposium on Methods of Evaluating Resources
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Razved. i okh. nedr 28 no.12:35-42 D '62. (MIRA 16:5)

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B177/B186

AUTHORS: Belyy, V. A., Shentakov, V. M.

TITLE: On the use of certain polymers for sliding bearings

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 17, 1962, 546, abstract
17P95 (Sb. tr. In-t. mashinoved. i avtomatiz. AN BSSR no. 2,
1961, 93 - 115)

TEXT: The basic requirements for bearing materials are stated. The
properties of fluoroplast-4 and caprone and their use as bearing materials
are described and also the design and manufacture of caprone sliding
bearings. [Abstracter's note: Complete translation.]

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